

# Work Order ID 52561

October 1, 2009 10:22:57 AM



Page 1

Item ID: D119-646-241

Accept



Setup Start



Revision ID: B

Item Name: Replacement Skidtube STD w/ Training Wearplates

Stop



Start Date: 10/05/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: MF

Date: 09-10-01

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3887

B

IIN-D119-646

B

100

0.00



DC

0.00

Document Control

Memo

Photocopy bluefile & type labels per PPP D119-646-241 CHG001

SCVAP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

*Remove 45.3125" from 2500-1-180*

1- Bend FWD end of tube using Bender 1 and bend prog D3887 FWD per dwg D3887 ✓

2- Cut FWD end of tube as per dwg D3887. *Verify measurement* ✓

3- Cut AFT end of tube as per dwg D3887.

4- Buff out marks left from bending ✓

5- Drill Aft cap pilot hole using DT ~~SIZE~~ \*\*\*DO NOT OPEN TO FINISHED

6- Cleco DT ~~in position and~~ install drill Jig DT *9422* drill X-bolt spacer ✓  
pilot holes using 3/16" drill

7- Drill FWD cap holes using DT *8215* Open FWD & AFT cap holes to 0.208"

8- Drill FWD holes

*holes must be laid out manually*

9- Drill Tow ring hole using DT \_\_\_\_\_ Open to finished size.

*holes must be laid out manually*

10--Drill wearplate holes

11- Deburr

*10/09/11/09*

*9-11-10*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

**Abstract**

Page 3

**Accept**

\_\_\_\_\_

**Setup Start**

\_\_\_\_\_

**Stop**

**00000000000000000000000000000000**

**Cust Item ID:**

**Abstract**

**RESEARCH DESIGN AND METHODS**

**Customer:**

**Reference:**

Run Start

**Abstract**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Stop**



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

**Insp.  
Stamp**

0.00

**00000000000000000000**

**HandFinish**

## Memo

0.00

## Hand Finishing

0.00



QC

## Memo

0.00

## Quality Control

0.00

\_\_\_\_\_

QC

## Memo

0.00

## Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start



QC: Date: SPC (Y/N): Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

130

0.00



Skidtubes

Memo

0.00

1-Open crossbolt spacer holes to finished size.

2-Deburr crossbolt spacer holes as per Dwg D3887 and blow out chips from inside the tube

1 10/11/09

140

0.00



Skidtubes

Memo

0.00

1-Bond web in place as per Dwg D3887 & QSI 015.

A/R ☐ Sikaflex-291 ☒ 10/12/09 ☐

Sikaflex expire date: ☒ 10/12/09 ☐

Start: ☒ 10/11/09 ☐ Time: ☒ 3:30 ☐

Finish: ☐ ☐ Time: ☐

\*\*\*\*\* (Adhere for 12 hours) \*\*\*\*\*

2- Countersink crossbolt spacer holes, and prepare tube for welding, deburr.

3- C'sink crossbolt spacer holes, and prepare tube for welding, deburr.

1 10/11/09

P/O

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D119-646-241 PAR #: \_\_\_\_\_ Fault Category: Skid tubes NCR: Yes No DQA: / Date: 05-11-18  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: / Date: 05-11-18

NCR: <u>52561</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9-11-10	110	Tube broke while bending Fudend  R.C: process	<u>/</u> BSIMR	Scrap tube + Salvage web D3885-1 BS2421 No apparent stress or voids in material	<u>/</u> 9-11-11	<u>/</u> 05-11-11	<u>/</u> BSIMR	<u>/</u> 05-11-11

NOTE: Date & initial all entries



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Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
160		0.00							
Skidtubes	Memo	0.00							
Skidtubes	1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/R□□Aluminum Rod□  2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole.  3-Counterbore 5/16" x 0.750" deep as per Dwg D3887.  4- Deburr & Scribe batch # on Aft end of tube.								

SCRAP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	Memo	0.00							
180 	QC10- Inspect visual per QSI004- ground welds	0.00							
QC Quality Control	Memo	0.00							
190 	Pressure Wash per QSI005 4.3	0.00							
HandFinish Hand Finishing	Memo	0.00							

SCRAP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
	Powdercoat	0.00							
Powder Coating	Memo START TIME: _____ OVEN TEMPERATURE: _____ FINISH TIME: _____								
210	QC3- Inspect Part Finish	0.00							
	QC	0.00							
Quality Control									
240		0.00							
	HandFinish	0.00							
Hand Finishing	Memo 1-Install wearplates as per Dwg D3887. 2-Inspect for foreign objects as per QSI 024 3 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/> Sikaflex expire date: <input type="checkbox"/> _____								

Scrap

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Start Date: 10/05/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
255	Wing Walk as per dwg QSI005 4.4 Batch _____	0.00							
HandFinish	Memo	0.00							
Hand Finishing									
256	QC3- Inspect Part Finish	0.00							
QC	Memo	0.00							
Quality Control									

SCVAP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:

Required Date: 10/26/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

260

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00



Packaging

Memo

0.00

Packaging

SCRAP

270

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

D3865-1

B-52421 to  
restock per NCR 7

u 9.11.11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

October 1, 2009 10:22:57 AM

Page 1

Work Order ID: 52561

Parent Item: D119-646-241RevB

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/05/2009

Required Date: 10/26/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2500-1-190RevU/R		Manufactured	No			110	Each	0.0000	1.0000			
Ext'n -1' Beam Tube 4"												
D3885-1RevB		Manufactured	No			140	Each	0.0000	1.0000			
Standard Web												
D3903-1RevB		Manufactured	No			160	Each	126.0000	12.0000			
Spacer												

D3681-1RevA

Spacer

Manufactured No

160

Each

94.0000

8.0000

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

126

51849

126

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

20

51920

20

Main Warehouse

ST

74

47123

13

48178

61

D2855-3RevB

Cap

Manufactured No

240

Each

0.0000

2.0000

SCVIA

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item Name: Replacement Skidtube STD w/ Training Wearplates


Start Date: 10/05/2009

Required Date: 10/26/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN3C5A  Bolt		Purchased	No			240	Each	1,058.000	34.0000			

Warehouse  
Location

Loc Qty

Loc Code

Main Warehouse

ST

1058

111424

8

111707

69

112314

181

112489

100

112641

500

112720

200

Scrap

D3904-1RevB



Washer

Manufactured No

240

Each

300.0000

16.0000

Warehouse  
Location

Loc Qty

Loc Code

Main Warehouse

ST136

300

51875

300

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3672-1RevB  Phenolic Washer		Manufactured	No			240	Each	1,180.000	4.0000			

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

680

39275

19

42329

115

47628

546

Main Warehouse

ST117

500

51674

500

D3849-041RevB

Manufactured

No

240

Each

0.0000

1.0000



FWD WEARPLATE ASSY, STD/FLOAR GEAR

D3849-043RevB

Manufactured

No

240

Each

0.0000

1.0000



AFT WEARPLATE ASSY, STD GEAR

SCRAP

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Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN3C46A  BOLT		Purchased	No			240	Each	93.0000	8.0000			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	93	
106169	5	
106176	9	
111918	79	

MS21043-3  Nut		Purchased	No			240	Each	5,267.000	8.0000			
--	--	-----------	----	--	--	-----	------	-----------	--------	--	--	--

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	80	
103691	80	
Main Warehouse		
ST	5187	
111819	78	
112243	133	
112314	4976	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8

7

6

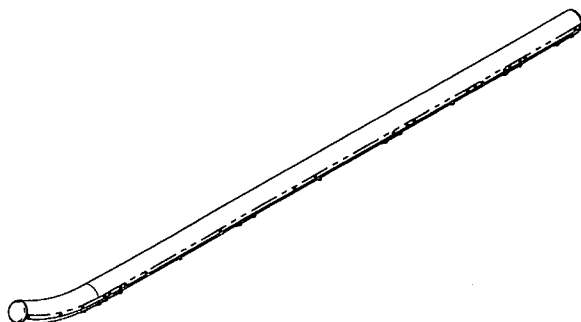
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4

3

2

1



**D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)**  
**D3887-043 STANDARD SKIDTUBE ASSY WITH WEAPLATE (SIMILAR)**  
**D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)**

# NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB  
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs  
D3887-043 = 37.0 lbs  
D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3887-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	5			D3846-1	GASKET
16	1			D3846-11	GASKET
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS4-1032-130	INSERT
42	34	34	4	AN3C5A	BOLT
43			8	AN3C46A	BOLT
44	34	34		NAS1149C0332R	WASHER (OR AN960C10L)
45			8	MS21043-3	NUT

#52561

RELEASED  
10/10/13/14/15

B	ALS4-1032-130 WAS AELS-1032-130. ZN C4-1, C5-7, C3-7; ADD DT8931. ZN A6-1; ADD 134.04. ZN C4-8; D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3C5A WAS AN3C4A (ZN C6-2, C2-2, C6-3, C2-3, C6-4, C2-4)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	RF	DRAWING NO.	REV. B
CHECKED	RF	D3887	SHEET 1 OF 8
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	A119 STD SKIDTUBE ASSY	NTS
DE APPR.	RF	DATE 09.06.30	
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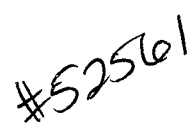
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



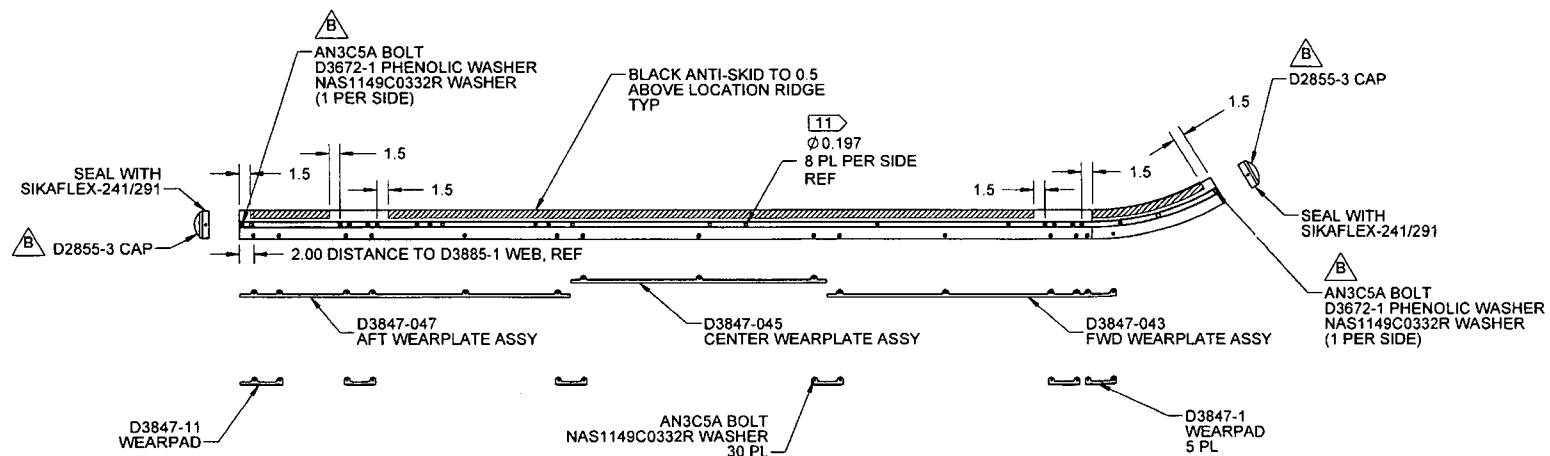
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8/27/15 MP

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CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D3887	SHEET 2 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			



**D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE**  
(MAKE FROM D3887-11)

#52561

RELEASED  
29/07/15

DESIGN	RF	DART AEROSPACE USA, INC.	
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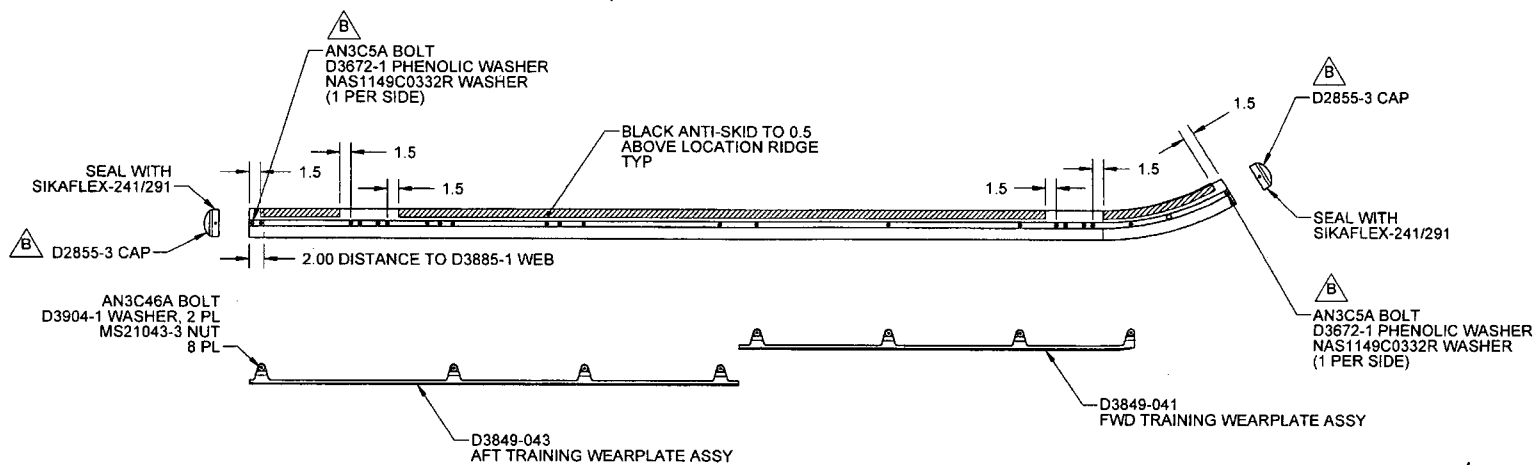
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





**D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE**  
(MAKE FROM D3387-13)

RELEASED  
09/06/03

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
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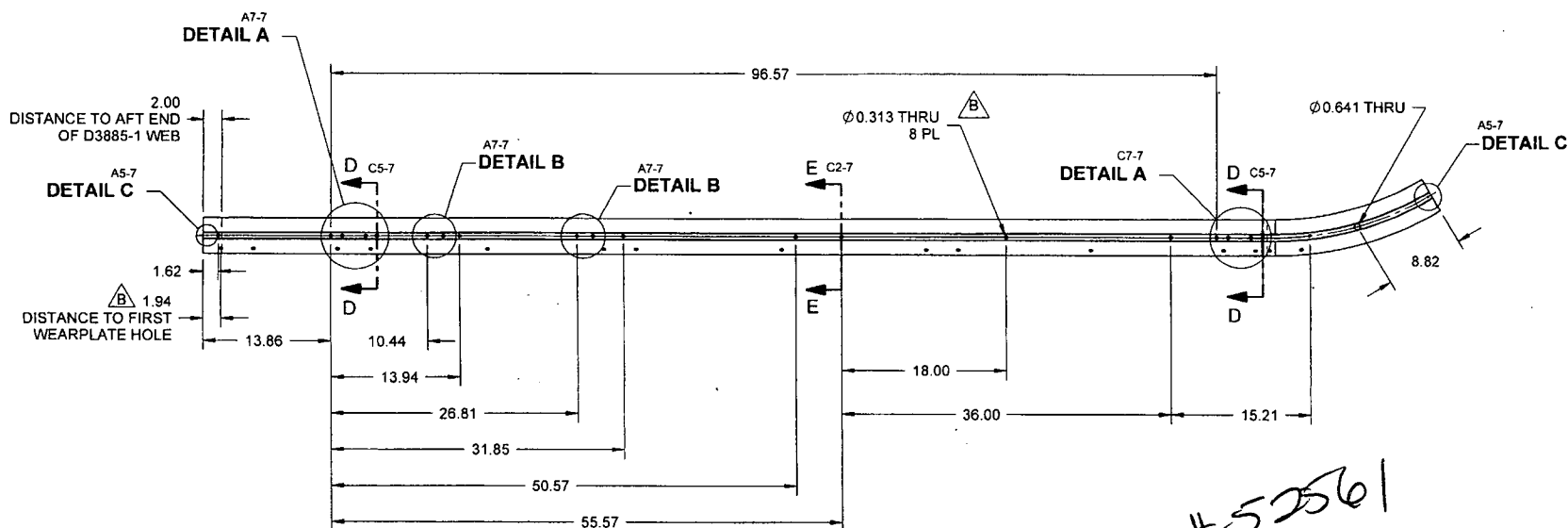
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**D3887-11 DRILLING DETAIL**  
(MAKE FROM D3887-1)

#52561

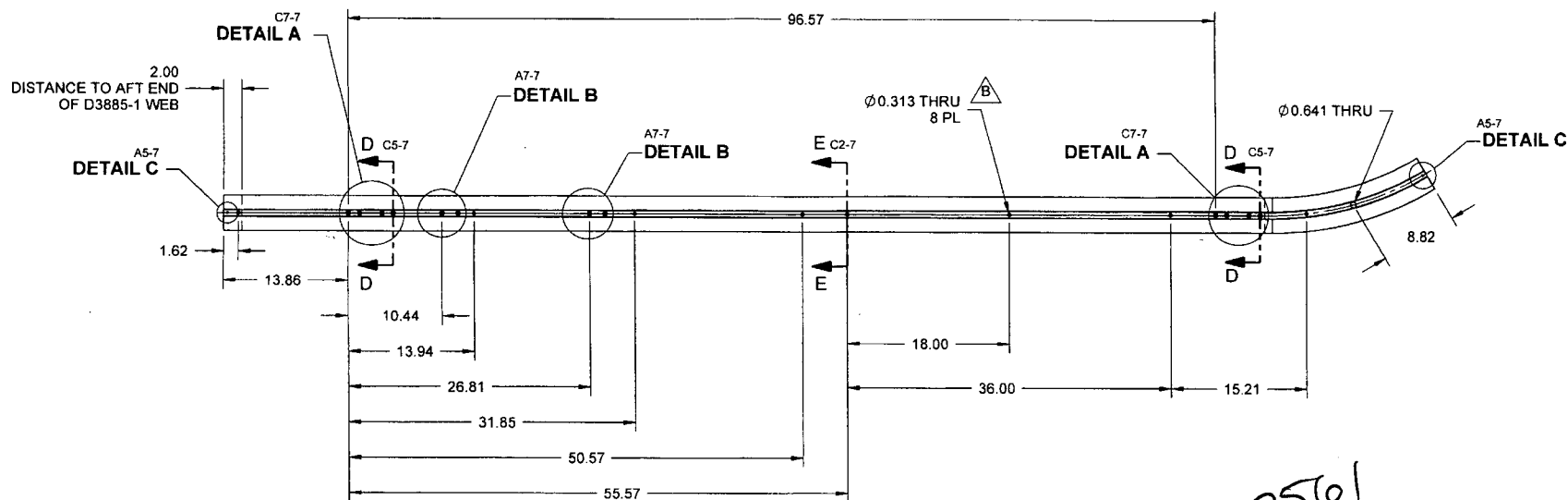
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09/15/10

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CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3887	SHEET 5 OF 8
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			



**D3887-13 DRILLING DETAIL**  
(MAKE FROM D3887-1)

RELEASED  
09/07/15

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CHECKED	RF	DRAWING NO. D3887	REV. B
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APPROVED	RF	A119 STD SKIDTUBE ASSY	SCALE
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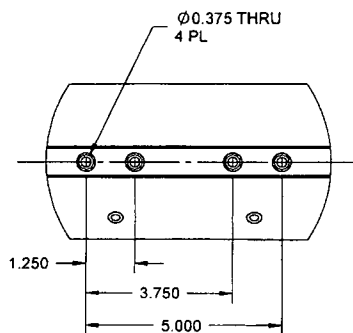
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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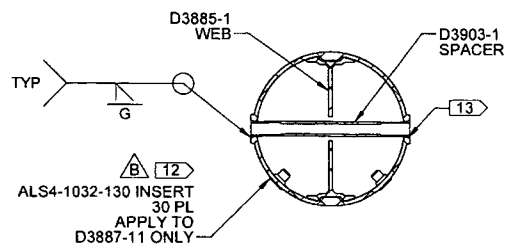
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

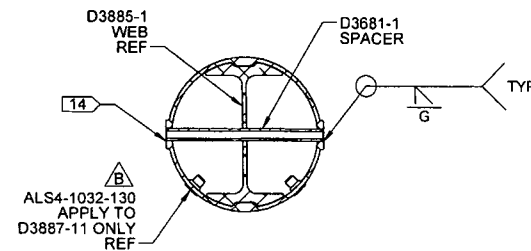
**NOTE:** Date & initial all entries



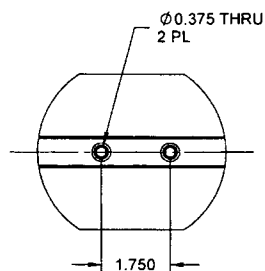
**DETAIL A**  
SCALE 4X  
D7-5  
C3-5  
D7-6  
C3-6



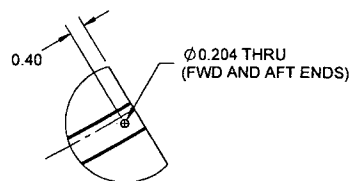
**SECTION D-D**  
SCALE 4X  
C7-5  
C3-5  
C7-6  
C2-6  
(FOR 12 X Ø0.375 HOLES  
PER SKIDTUBE)



**SECTION E-E**  
SCALE 4X  
C4-5  
C4-6  
(FOR 8 X Ø0.313 HOLES  
PER SKIDTUBE)



**DETAIL B**  
SCALE 4X  
C6-5  
C5-5  
C6-6  
C5-6



**DETAIL C**  
TYPICAL  
SCALE 4X  
C8-5  
C1-5  
C8-6  
C1-6

#52561

**NOTES:**

13) AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:

- i) CHAMFER HOLES Ø0.475 x 45°
- ii) INSERT D3903-1 SPACER
- iii) WELD INTO PLACE AND GRIND FLUSH
- iv) C'BORE TO 0.313 x 0.75 DEEP
- v) DEBURR HOLES



14) AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:

- vi) CHAMFER HOLES Ø0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
- vii) INSERT D3681-1 SPACER
- viii) WELD INTO PLACE AND GRIND FLUSH
- ix) DEBURR HOLES

**RELEASED**  
09/07/13

DESIGN	RF	<b>DART AEROSPACE USA, INC.</b>	
		PORT HADLOCK, WA	
DRAWN	RF	DRAWING NO.	REV. B
CHECKED	RF	D3887	SHEET 7 OF 8
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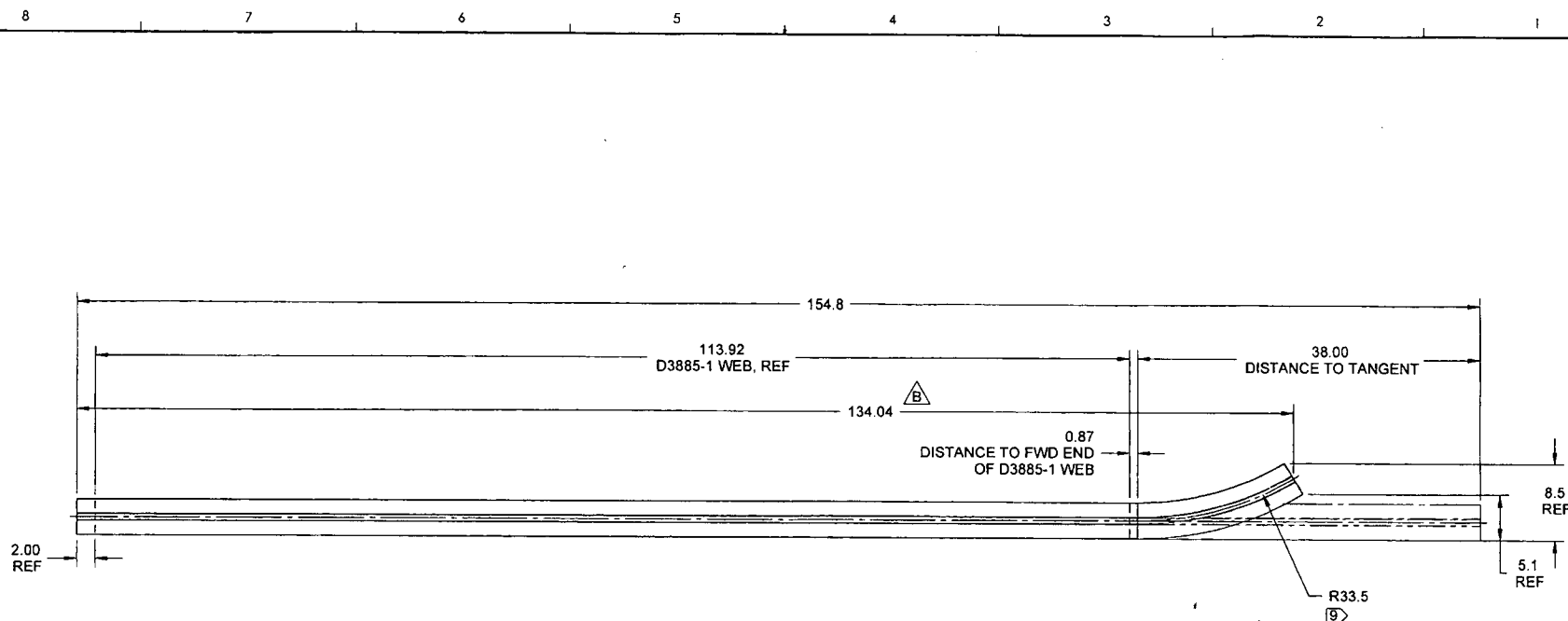
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





**D3887-1 BEND DETAIL**  
(MAKE FROM D2500-1-190 EXTRUSION)

#52561

RELEASED  
07/07/15

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CHECKED	RF	DRAWING NO. <b>D3887</b>	REV. B
MFG. APPR.	RF	TITLE	SHEET 8 OF 8
APPROVED	RF	<b>A119 STD SKIDTUBE ASSY</b>	SCALE
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries